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Schematic/Electrical Parts—

30010, 30015 and 30022 T5X, G5X E-P Express

Read the Safety Manual

PELLERIN MILNOR CORPORATION POST OFFICE BOX 400, KENNER, LOUISIANA 70063-0400, U.S.A.

Please Read

About the Manual Identifying Information on the Cover

The front cover displays pertinent identifying information for this manual. Most important, are the published manual number (part number) /ECN (date code). Generally, when a replacement manual is furnished, it will have the same published manual number, but the latest available ECN. This provides the user with the latest information applicable to his machine. Similarly all documents comprising the manual will be the latest available as of the date the manual was printed, **even though older ECN dates for those documents may be listed in the table of contents**.

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References to Yellow Troubleshooting Pages

This manual may contain references to "yellow pages." Although the pages containing troubleshooting procedures are no longer printed on yellow paper, troubleshooting instructions, if any, will be contained in the easily located "Troubleshooting" chapter or section. See the table of contents.

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Table of Contents
for ME7T5X11AE/2004063N
30010, 30015 and 30022 T5X, G5X E-P Express

Page	Description	Document/ECN
1	Component Parts List	W7T5XPL/2003356N
3	Warranty	BMP720097/92732A
4	How to Order Parts	BMP720097R/72332A
6	How to Use Electrical Schematics	MSFD0106AE/95041V
16	3 Phase Motor Connection Diagram	BMP850029/99362B
17	3P Motor Diagram-Multivolt	W80008/2001253A
19	Component Location Details	W7T5XTG1/2002372A
20	Board to Board Wiring	W7T5XBW/2004063B
22	Flushing Supplies	W7T5XCF/2001135B
24	Electrical Valves	W7T5XEV/2001135B
26	Microprocessor Inputs	W7T5XIA/2002234B
28	Control Circuit Transformer	W7T5XLV/2003356B
30	Start Circuit & Door Interlock	W7T5XS+/2001135B
32	Start Circuit w/ Fuse/Relay Board	W7T5XS+A/2002372B
34	Variable Speed Controller GPD305	W7V5XVPA/2001135B
36	Variable Speed Controller GPD315 (1PH)	W7V5XVPB/2001135B
38	Variable Speed Controller GPD506 (1PH)	W7T5XVPC/2002364B

COMPONENT PARTS LIST

W7T5XPL/2003356N

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
	>>>CONTROL BOX LAYOUTS				
01	DETAIL- CONTROL PANEL H8J	W7T5JTG1	B2T2001033	3015/3022 T5X CONTROL PANEL	SEE FUNCTION
BA	**>>PRINTED CIRCUIT BOARDS**				
BADV	BOARD=DISPLAY/SWITCH PANEL	W7T5XBW	08BHEPSPT	EP+ SWITCH PANEL BD>TEST	BEHIND SWPNL
BAUP	BOARD=PROCESSOR+I/O	W7T5XBW	08BH18EPXT	188 PROC EP-EXPRESS->TEST	CONTROL PANEL
CR	**>>RELAY-PILOT OR CONTROL**				
CRD	RELAY-OK TO OPEN DOOR	W7T5XS+	09C024D71	RELAY 4PDT DIFGLD 14PN 240V	CONTROL PANEL
CRD	RELAY-OK TO OPEN DOOR	W7T5XS+A	09C024D71	RELAY 4PDT DIFGLD 14PN 240V	START/RELAY BD
CRDL	RELAY-DOOR CLOSED AND LOCKED	W7T5XS+	09C024D71	RELAY 4PDT DIFGLD 14PN 240V	CONTROL PANEL
CRDL	RELAY-DOOR CLOSED AND LOCKED	W7T5XS+A	09C024D71	RELAY 4PDT DIFGLD 14PN 240V	START/RELAY BD
CS	**>>CONTACTOR-MOTOR STARTER**				
CSVP	CONTACTOR-ENABLE INVERTER	W7T5XS+	09MC08C371	16A 3P MCS CONT NR 240V5/6	CONTROL PANEL
CSVP	CONTACTOR-ENABLE INVERTER	W7T5XS+A	09MC08C371	16A 3P MCS CONT NR 240V5/6	CONTROL PANEL
EF	**>>FUSE OR FUSE HOLDER**				
EF1	FUSE-CONTROL CIRCUIT X-BUS	W7T5XS+A	09FF006AMA	FUSE BK/ABC 6 AMP 250V BUSS	START/RELAY BD
EF2	FUSE-CONTROL CIRCUIT Y-BUS	W7T5XS+A	09FF006AMA	FUSE BK/ABC 6 AMP 250V BUSS	START/RELAY BD
EF71A	FUSE-CONTROL CIRCUIT X-BUS	W7T5XS+	09FF006AMA	FUSE BK/ABC 6 AMP 250V BUSS	CONTROL PANEL
EF71B	FUSE-CONTROL CIRCUIT Y-BUS	W7T5XS+	09FF006AMA	FUSE BK/ABC 6 AMP 250V BUSS	CONTROL PANEL
EFP1	FUSE-TRANSFORMER PRIMARY	W7T5XLV	09FF005AWN	FUSE #KTK 5A600V=HPS HOLDER	CONTROL PANEL
EFP2	FUSE-TRANSFORMER PRIMARY	W7T5XLV	09FF005AWN	FUSE #KTK 5A600V=HPS HOLDER	CONTROL PANEL
EM	**>>ELECTROMAGNET AND SOLENOID**				
EMDL	SOLENOID-DOOR UNLOCK	W7T5XS+	09K062B71	SOLENOID 240/60--220/50 = ILOC	DOOR LATCH
EMDR	SOLENOID-DRAIN VALVE	W7T5XEV	96D350SA71	DRAINVAL 3" 240V50/60 SUDSPOR	BELOW SHELL
ES	**>>POWER SUPPLY-ELECTRONIC**				
ESPS	POWER SUPPLY-MICROPROCESSOR	W7T5XBW	08PSS3401T	40 WATT POWER SUPPLY TESTED	CONTROL PANEL
EX	**>>TRANSFORMERS**				
EXHV	TRANSFORMER-INCOMING VOLT.240VAC	W7T5XLV	MESSAGE EW	SEE EX37-1, -2, OR -3 FOR VOLTAGE	CONTROL PANEL
EXHV-1	TRANSFORMER-208VAC TO 240VAC	W7T5XLV	09UB25AT71	AUTOXFMR 208V-230V 250VA	CONTROL PANEL
EXHV-3	TRANSFORMER-380/480V TO 240V	W7T5XLV	09UA025AAB	XFMR 380-480PRI/120-240SEC250V	CONTROL PANEL
EXHV-2	TRANSFORMER-600V TO 240V	W7T5XLV	09U251AB71	XFMR 600VPRI/240VSC-250VA-3%REG	CONTROL PANEL
MT	**>>MOTORS**				
MTWE	MOTOR-WASHER	W7T5XVPA	MESSAGE SO	SEE SPECIFIC COMPONENT+NAMEPLATE	BELOW SHELL
MTWE	MOTOR-WASHER	W7T5XVPB	MESSAGE SO	SEE SPECIFIC COMPONENT+NAMEPLATE	BELOW SHELL

COMPONENT PARTS LIST

W7T5XPL/2003356N

COMPONENT NUMBER	FUNCTION OF THIS COMPONENT NUMBER	WHERE TO FIND THIS COMPONENT	MILNOR P/N	DESCRIPTION	LOCATION
MV	**>>>MOTOR POWER INVERTERS**				
MVINV	INVERTER-VARI SPEED LOW VOLTAGE	W7T5XVPA	09MV030G74	VARSPEED 3HP 11A 230V GPD305	CONTROL PANEL
MVINV	INVERTER-VARI SPEED LOW VOLT 1PH	W7T5XVPB	09MV050F74	VARSPEED STANDARD 5HP 230V	CONTROL PANEL
SH	**>>SWITCH-HAND OPERATED**				
SH01	SWITCH-208/240VAC	W7T5XLV	09N050	TOGSW SPDT NO OFF 10A250V	CONTROL PANEL
SHDD	SWITCH-UNLATCH DOOR	W7T5XS+	09N405PB10	SWASS PBBK 1NO	DOOR LATCH
SHDD	SWITCH-UNLATCH DOOR	W7T5XS+A	09N405PB10	SWASS PBBK 1NO	DOOR LATCH
SK	**>>SWITCH-KEYLOCK**				
SKPR	SWITCH-RUN/PROGRAM	W7T5XIA	09N127C	KEYSW SPST 7A120VAC SCREW TERM	SWITCH PANEL
SM	**>>SWITCH-MECHANICAL OPERATED**				
SMD	SWITCH-DOOR CLOSED	W7T5XS+	02-04177	MICROSWITCH, 1 IN LEVER	DOOR LATCH
SMD	SWITCH-DOOR CLOSED	W7T5XS+A	02-04177	MICROSWITCH, 1 IN LEVER	DOOR LATCH
SMWVB	SWITCH-VIBRATION	W7T5XIA	SAE03 151	ASSY-VIBRATION SWT=LG CONTR	CONTROL PANEL
SP	**>>>SWITCH-PRESSURE**				
SPLL	PRESSURE SW.-LOW WATER LEVEL	W7T5XIA	09N086A	PRESS SWITCH EATON #738-761	CONTROL PANEL
SPHL	PRESSURE SW.-HIGH WATER LEVEL	W7T5XIA	09N086A	PRESS SWITCH EATON #738-761	CONTROL PANEL
VE	**>>VALVE-ELECTRIC OPERATED**				
VEC1	VALVE-FLUSH DETERGENT	W7T5XCF	MESSAGE MS	CHEMICAL FLUSHING VALVE BY OTHERS	SUPPLY INJECT
VEC2	VALVE-FLUSH BLEACH	W7T5XCF	MESSAGE MS	CHEMICAL FLUSHING VALVE BY OTHERS	SUPPLY INJECT
VEC3	VALVE-FLUSH SOUR	W7T5XCF	MESSAGE MS	CHEMICAL FLUSHING VALVE BY OTHERS	SUPPLY INJECT
VEC4	VALVE-FLUSH SOFTNER	W7T5XCF	MESSAGE MS	CHEMICAL FLUSHING VALVE BY OTHERS	SUPPLY INJECT
VEC5	VALVE-FLUSH STARCH	W7T5XCF	MESSAGE MS	CHEMICAL FLUSHING VALVE BY OTHERS	SUPPLY INJECT
VEWC	VALVE-COLD WATER	W7T5XEV	96P016A71	1/2DUOVAL 240VHAYS4-3108-240	REAR OF MACH
VEFL	VALVE-FLUSH	W7T5XEV	96TDC2AA71	1/2" N/C 2WAY 240V50/60C VALVE	REAR OF MACH
VEWH	VALVE-HOT WATER	W7T5XEV	96P016A71	1/2DUOVAL 240VHAYS4-3108-240	REAR OF MACH

2

PELLERIN MILNOR CORPORATION

LIMITED STANDARD WARRANTY

We warrant to the original purchaser that MILNOR machines including electronic hardware/software (hereafter referred to as “equipment”), will be free from defects in material and workmanship for a period of one year from the date of shipment from our factory with no operating hour limitation. This warranty is contingent upon the equipment being installed, operated and serviced as specified in the operating manual supplied with the equipment, and operated under normal conditions by competent operators.

Providing we receive written notification of a warranted defect within 30 days of its discovery, we will – at our option – repair or replace the defective part or parts, FOB our factory. We retain the right to require inspection of the parts claimed defective in our factory prior to repairing or replacing same. We will not be responsible, or in any way liable, for unauthorized repairs or service to our equipment, and this warranty shall be void if the equipment is repaired or altered in any way without MILNOR’s written consent.

Parts which require routine replacement due to normal wear – such as gaskets, contact points, brake and clutch linings and similar parts – are not covered by this warranty, nor are parts damaged by exposure to weather or to chemicals.

We reserve the right to make changes in the design and/or construction of our equipment (including purchased components) without obligation to change any equipment previously supplied.

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BMP720097
92732A

How to order repair parts

Repair parts may be ordered either from the authorized dealer who sold you this machine, or directly from the MILNOR factory. In most cases, your dealer will have these parts in stock.

When ordering parts, please be sure to give us the following information:

1. Model and serial number of the machine for which the parts are required
2. Part number
3. Name of the part
4. Quantity needed
5. Method of shipment desired
6. In correspondence regarding motors or electrical controls, please include all nameplate data, including wiring diagram number and the make or manufacturer of the motor or controls.

All parts will be shipped C.O.D. transportation charges collect only.

Please read this manual

It is strongly recommended that you read the installation and operating manual before attempting to install or operate your machine. We suggest that this manual be kept in your business office so that it will not become lost.

PELLERIN MILNOR CORPORATION
P.O. BOX 400, KENNER, LA., 70063-0400, U.S.A.
FAX: Administration 504/468-9307, Engineering 504/469-1849, Service 504/469-9777

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HOW TO USE MILNOR® ELECTRICAL SCHEMATICS

Milnor® electrical schematic manuals contain a ***table of contents/component list*, a set of s*chematic drawings, and a signal routing table.*** These documents are cross referenced and must be used together.

The ***table of contents/components list shows,*** for every component on every schematic in the manual, the *component item number*(explained in detail below), statement of function, parent schematic number, part number, description and electric box location.

The ***schematic drawings*** use symbols for each electro-mechanical component, and indicate the function of each. Integrated circuits are not shown, but the function of each microprocessor input and output is stated. Certain electrical components not pertinent to circuit logic, such as wire connectors, are not represented on the schematic but are shown in the signal routing table. **Most machines (manuals) require several schematics to describe the complete control system *including all available options.* However, this means that there are usually some schematics that do not apply to a specific machine.** Each schematic is devoted to circuits with common functions (e.g., microprocessor inputs, motor contactors). Schematics appear in the manual in alphanumeric order.

The ***signal routing table*** assists in determining wire routing. It identifies each group of conductors in a control system connected with zero resistance. Groups are identified by a two or three character wire number. Each wire belonging to such a group of conductors has that group's wire number printed along the wire insulation. Although there are some exceptions, generally each group of conductors within the entire electrical system for a machine family has its own unique wire number. The signal routing table for the manual lists each wire alphanumerically by wire number and each component/pin number to which *the wire is attached,* including those not shown on the schematics (e.g., wire connectors). Milnor® document MSTS0202BE HOW TO USE THE SIGNAL ROUTING TABLE provides more information.

Component Prefix Classifications and Descriptions

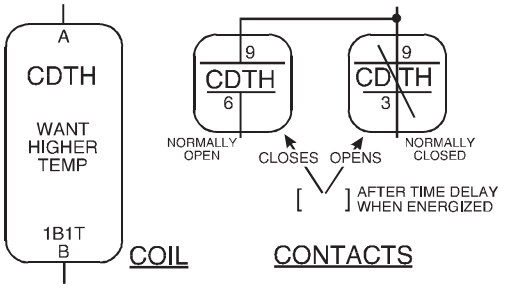
The ***component item numbers*** consist of up to six characters and appear as part of a component's symbol on the schematic. The first two characters indicate the general class of component and the remaining characters are a mnemonic for the function. For example, CD is the code for all time delay relays and SR stands for safety reset. Thus, CDSR is a time delay relay that serves as a safety reset.

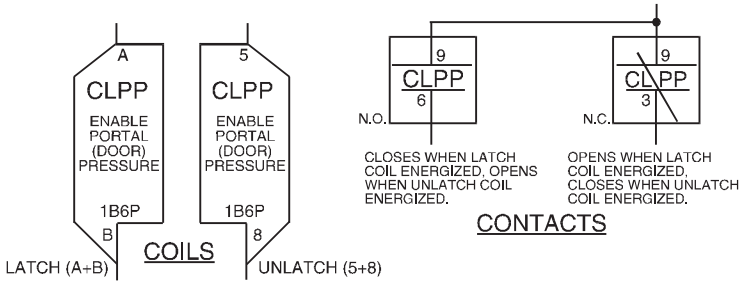
The following are descriptions of the electrical components used in Milnor® machines. Descriptions are in alphabetical order of the component class code (two character prefix).

BA=Printed Circuit Board Insulating substrate on which a thin pattern of copper conductors has been formed to connect discreet electronic components also mounted on the board.

CB=Circuit Breaker Automatic switch that opens an electric circuit in abnormal current conditions (e.g., an overload).

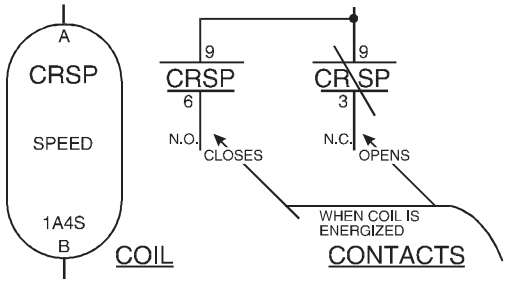
CD=Control, Time Delay Relay A relay whose contacts switch only after a fixed or adjustable delay, once voltage has been applied to its coil. The contacts switch back to normal (de-energized state) immediately when the voltage is removed.

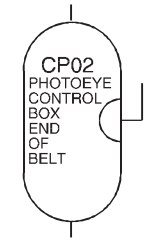




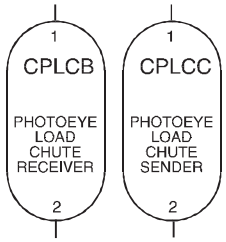
CL=Control, Latch Relay A relay which latches in an energized or set position when operated by one coil (the *latch/set coil*). The relay stays latched, even though coil voltage is removed. The relay releases or unlatches when voltage is applied to a second coil, (the *unlatch/reset coil*).

CR=Control, Relay A relay whose contacts switch immediately when voltage is applied to its coil and revert to normal when the voltage is removed.





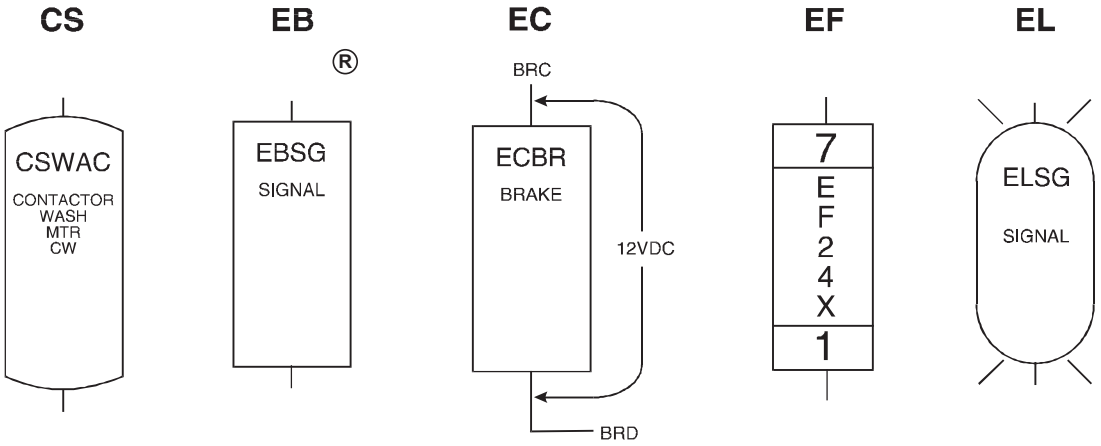
Example of One Assembly



Example of Two Separate Assemblies

CP=Control, Photo-Eyes Photo-eyes sense the presence of an object without direct physical contact. Photo-eyes consist of a *transmitter, receiver, and output module.* These components may be housed in one assembly with the transmitter bouncing light off of a reflector to the receiver, or these components can be housed in *two separate assemblies* with the transmitter pointed directly at the receiver.

The photo-eye can be set to turn on its output either when the light beam becomes blocked (dark operate) or when it becomes unblocked (light operate).



CS=Control, Contactor/Motor Starter A relay capable of handling heavier electrical loads, usually a motor.

EB=Electric Buzzer An audible signaling device.

EC=Electric Clutch A clutch consists of a coil and a rotor. The rotor has two separate rotating plates. These plates are free to rotate independent of each other until the coil is energized. Once energized the two plates turn as one.

ED=Electronic Display A visual presentation of data, such as an LCD (liquid crystal display), LED (light emitting diode) display, or VFD (vacuum florescent display).

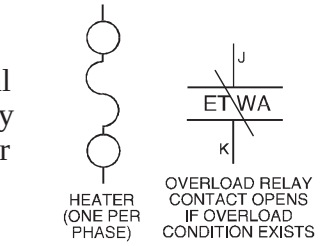
EF=Electric Fuse A fuse is an over-current safety device with a circuit opening fusible member which is heated and severed by the passage of over-current through it.

EL=Electric Light Indicator lights may be either incandescent or fluorescent.

EM=Electro Magnet Solenoid A device consisting of a core surrounded by a wire coil through which an electric current is passed. While current is flowing, iron is attracted to the core (e.g., a pinch tube drain valve solenoid).

ES=Electronic Power Supply A device that converts AC (altemating current) to filtered and regulated DC (direct current). The input voltage to the power supply is usually 120 or 240 VAC . The output is +5, +12, and -12 VDC.

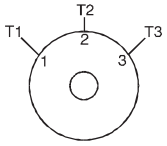
ET=Thermal Overload A safety device designed to protect a motor. A thermal overload consists of an overload block, heaters, and an auxiliary contact. The auxiliary contact is normally installed in a safety (three-wire) circuit that stops power to the motor contactor coil when a motor overload occurs.



EX=Electrical Transformer A device that transfers electrical energy from one isolated circuit to another, often raising or lowering the voltage in the process.

KB=Keyboard Device similar to a typewriter for making entries to a computer.

MN=Electronic Monitor (CRT) A cathode ray tube used for visual presentation of data.



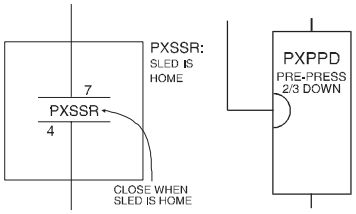
MR=Motors Electro-mechanical device that converts electrical energy into mechanical energy.

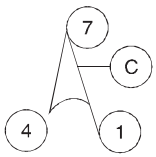
MV=Motor (Variable Speed) Inverter To vary the speed of an AC motor, the volts to frequency ratio must be kept constant. The motor will overheat if this ratio is not maintained.

The motor variable speed inverter converts three phase AC to DC. The inverter then uses this DC voltage to generate AC at the proper voltage and frequency for the commanded speed.

NOTE: Switch symbols used in the schematics and described below always depict the switch in its unactuated state.

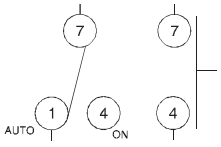
PX=Proximity Switch A device which reacts to the proximity of an target without physical contact or connection. The actuator or target causes a change in the inductance of the proximity switch which causes the switch to operate. Proximity switches can be two-wire (AC) or three-wire (DC) devices.

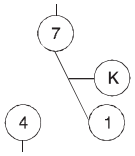




SC=Switch, Cam Operated A switch in which the electrical contacts are opened and/or closed by the mechanical action of a cam(s). Applications include 35-50 pound timer operated machines, autospot, timer reversing motor assembly, and some balancing systems.

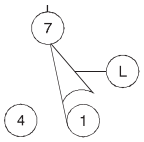
SH=Switch, Hand Operated A switch that is manually operated (e.g., *Start button, Master switch,* etc.).



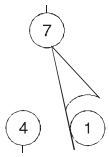


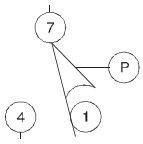
SK=Switch, Key Lock A switch that requires a key to operate . This prevents unauthorized personnel from gaining access to certain functions (e.g., the *Program Menu*).

SL=Switch, Level Operated A switch connected to a float that causes the switch to open and close as the level changes.



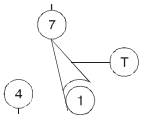
SM=Switch, Mechanically Operated A switch that is mechanically operated by a part of or the motion of the machine (e.g., door closed switch, tilt limit switches, etc.)





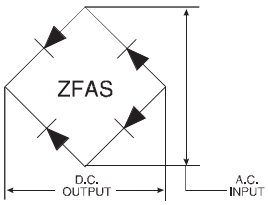
SP=Switch, Pressure Operated A switch consisting of a diaphragm that pushes against a switch actuator.

ST=Switch, Temperature Operated A switch that is actuated at a preset temperature (e.g., dryer safety probes) or has adjustable set points (e.g., Motometers or Combistats).



TB=Terminal Board A strip or block for attaching or terminating wires.

VE=Valve, Electric Operated A valve operated by an electric coil to control the flow of fluid. The fluid can be air, water or hydraulics.

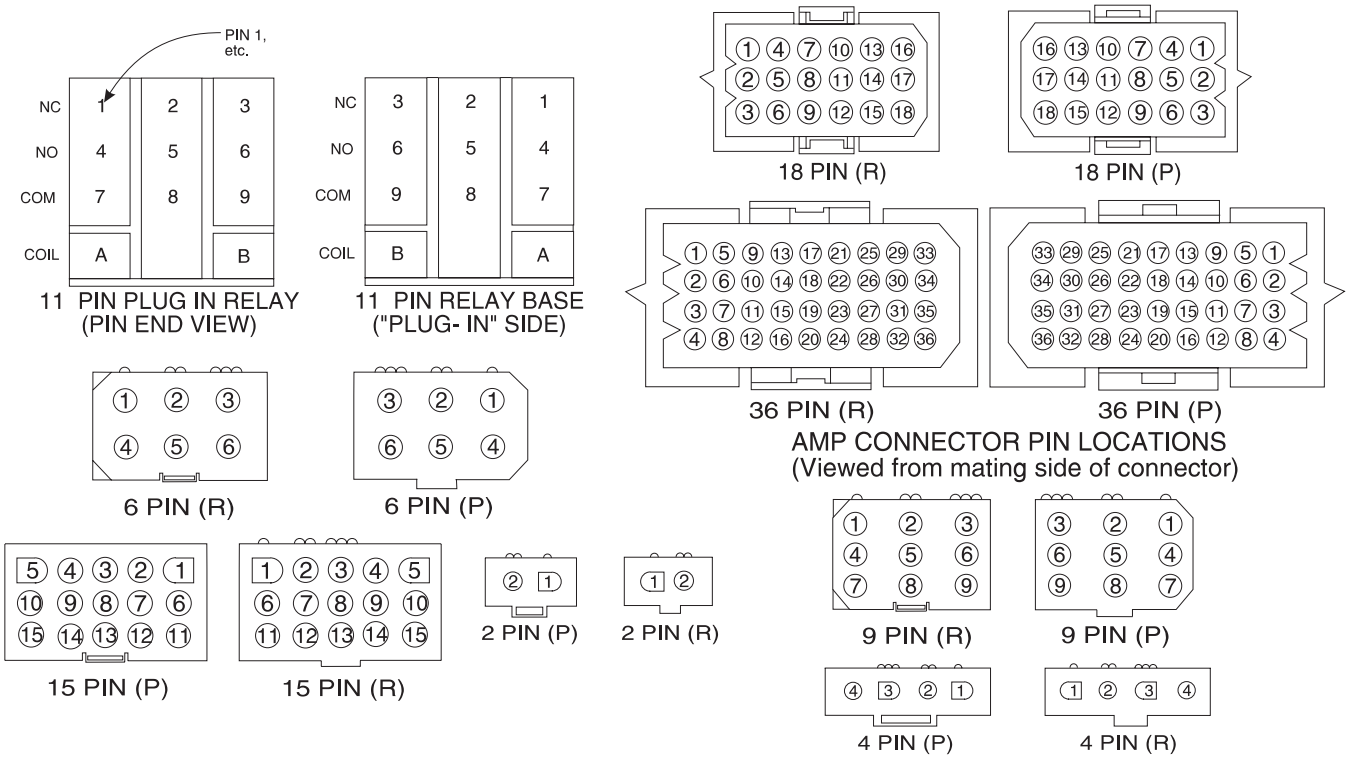


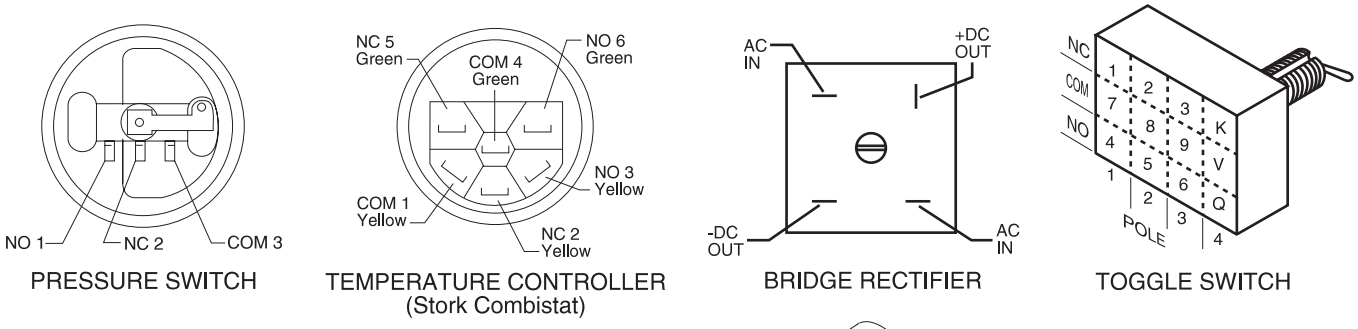
ZF=Rectifier A solid state device that converts alternating current to direct current.

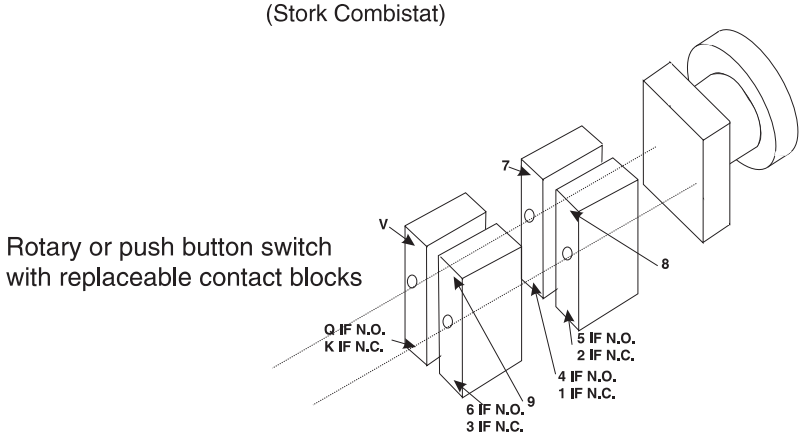
WC=Wiring Connector A coupling device for joining two cables or connecting a cable to an electronic circuit or piece of equipment. Connectors are male or female, according to whether they plug into or receive the mating connector.

Component Terminal Numbering

NOTE: Numbers shown usually appear on the component.







Features of Milnor® Electrical Schematics

Document W6DRYGS+A shown on the next page, is part of an actual schematic for the Milnor Gas Dryer. For the purposes of this instruction, the schematic is shown gray and explanations of the items on the schematic are shown black.

The item numbers below correspond to the circled item numbers shown on the drawing.

① The first six characters of the *drawing number (W6DRYG)* indicate that this is a *wiring diagram (W)*, identify the *generation of controls (6)*, and identify the *type of machine (DRYG*=Gas Dryer). These characters appear in the drawing number of every schematic in the set.

The characters following the first six are unique to each drawing. The two characters identified as the *page number* are an abbreviation for the function performed by the depicted circuitry (S+=three-wire circuit) and establish the order in which the schematic occurs in the manual (schematics are arranged in alpha-numeric order in the manual).

Whenever circuitry changes are significant enough to warrant publishing a new schematic drawing, the new drawing number will be the same as the old except for the major revision letter (*A* in the example).

② Included in the drawing title are the class of control system, the title of this circuit, and the circuit voltage.

③ Line numbers are provided along the bottom edge of the drawing. These permit service personnel in the field and at the Milnor factory to quickly relate circuit locations when discussing troubleshooting over the phone. Page and line numbers are referenced on the drawing as explained in items five and six below.

④ General functions of the circuit or portions thereof are stated across the top edge of the drawing.

⑤ Relay contacts show the page and line number on which the relay coil may be found. This is the type of cross referencing most frequently used in troubleshooting.

⑥ Relay coils show the page and line number on which its associated contacts are located.

⑦ Relay contacts and relay coils show the physical location of the relay.

⑧ The designation *MTA* applies to electronic circuit board connections. Typically, a control system will contain several different types of circuit boards and one or more boards of each type. A numerical suffix identifies the board type and a numerical prefix identifies which one of several boards of a given type is being depicted. For example, the designation *1MTA5* identifies this as the first I/O board (8 output, 16 input board) in the control system. As shown on the drawing, a pin number follows the board number, separated by a dash. Thus, *1MTA5-9* is pin 9 on this board. The numerical designations for board types vary from one control system to another. Some of the board types commonly encountered on the Mark II washer-extractor control and their designations are as follows:

MTA1-MTA6 = 8 output, 16 input (8/16) boards.

MTA11-MTA16 = 16 output boards

MTA30-MTA40 = processor boards

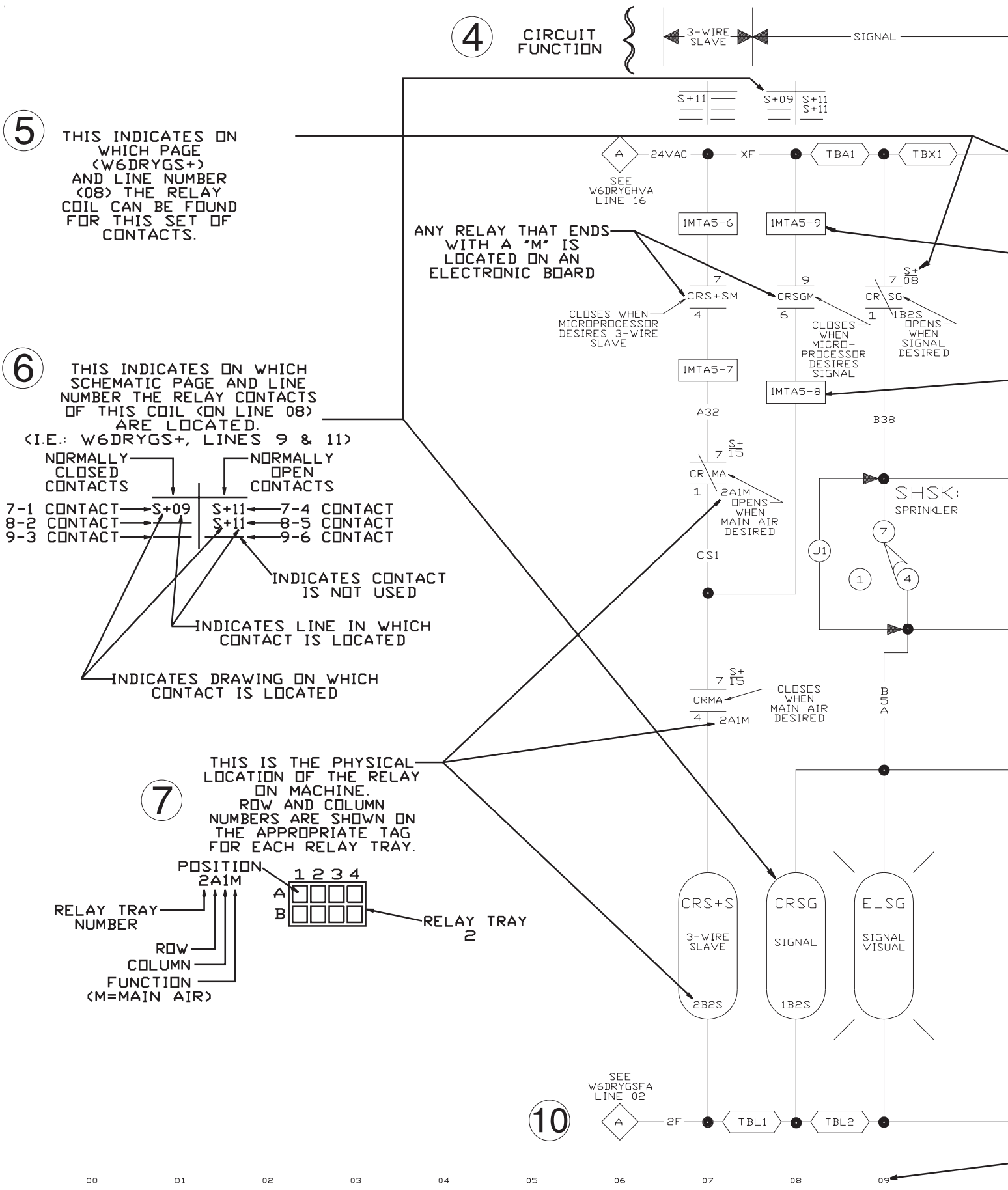
MTA41-MTA43 = digital to analog (D/A) boards

MTA51-MTA56 = analog to digital (A/D) boards

The complete listing of the boards utilized in a given control system can be found in the component list for that system.

⑨ The wire numbers, as described in the explanation of the signal routing table at the beginning of this section, are shown at appropriate locations on the schematic drawing.

⑩ Where diamond symbols appear at the end of a conductor, these are match points for continuing the schematic on another drawing. The page and line number that continues the circuit is printed adjacent to the diamond symbol. Where more than one match point appears on the referenced page, match diamonds containing corresponding letters.


4
CIRCUIT FUNCTION
3-WIRE SLAVE
SIGNAL
5
THIS INDICATES ON WHICH PAGE (W6DRYGS+) AND LINE NUMBER (08) THE RELAY COIL CAN BE FOUND FOR THIS SET OF CONTACTS.
S+11
S+09
S+11
S+11
A
24VAC
XF
TBA1
TBX1
SEE W6DRYGHVA LINE 16
1MTA5-6
1MTA5-9
ANY RELAY THAT ENDS WITH A "M" IS LOCATED ON AN ELECTRONIC BOARD
7
CRS+SM
4
CLOSES WHEN MICROPROCESSOR DESIRES 3-WIRE SLAVE
9
CRSGM
6
CLOSES WHEN MICRO-PROCESSOR DESIRES SIGNAL
7
S+08
CR SG
1
1B2S
OPENS WHEN SIGNAL DESIRED
6
THIS INDICATES ON WHICH SCHEMATIC PAGE AND LINE NUMBER THE RELAY CONTACTS OF THIS COIL (ON LINE 08) ARE LOCATED.
(I.E.: W6DRYGS+, LINES 9 & 11)
NORMALLY CLOSED CONTACTS
NORMALLY OPEN CONTACTS
7-1 CONTACT
8-2 CONTACT
9-3 CONTACT
S+09
S+11
S+11
7-4 CONTACT
8-5 CONTACT
9-6 CONTACT
INDICATES CONTACT IS NOT USED
INDICATES LINE IN WHICH CONTACT IS LOCATED
INDICATES DRAWING ON WHICH CONTACT IS LOCATED
1MTA5-7
1MTA5-8
A32
B38
7
S+15
CR MA
1
2A1M
OPENS WHEN MAIN AIR DESIRED
CS1
SHSK
SPRINKLER
J1
7
1
4
7
S+15
CRMA
4
2A1M
CLOSES WHEN MAIN AIR DESIRED
B5A
7
THIS IS THE PHYSICAL LOCATION OF THE RELAY ON MACHINE.
ROW AND COLUMN NUMBERS ARE SHOWN ON THE APPROPRIATE TAG FOR EACH RELAY TRAY.
POSITION 2A1M
1 2 3 4
A
B
RELAY TRAY NUMBER
ROW
COLUMN
FUNCTION (M=MAIN AIR)
RELAY TRAY 2
CRS+S
3-WIRE SLAVE
2B2S
CRSG
SIGNAL
1B2S
ELSG
SIGNAL VISUAL
SEE W6DRYGSFA LINE 02
10
A
2F
TBL1
TBL2
00
01
02
03
04
05
06
07
08
09

HOW TO READ MILNOR ELECTRICAL SCHEMATICS

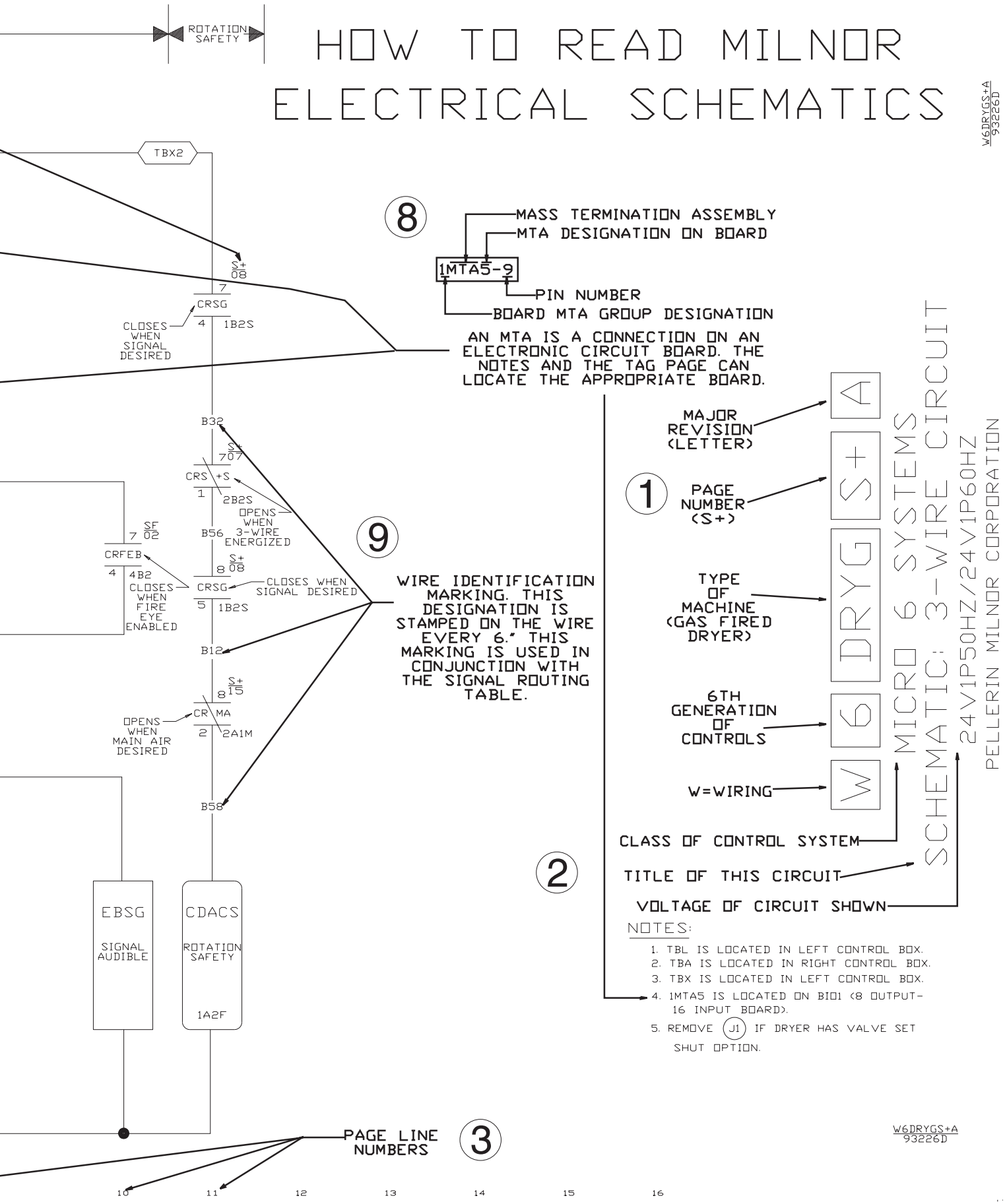
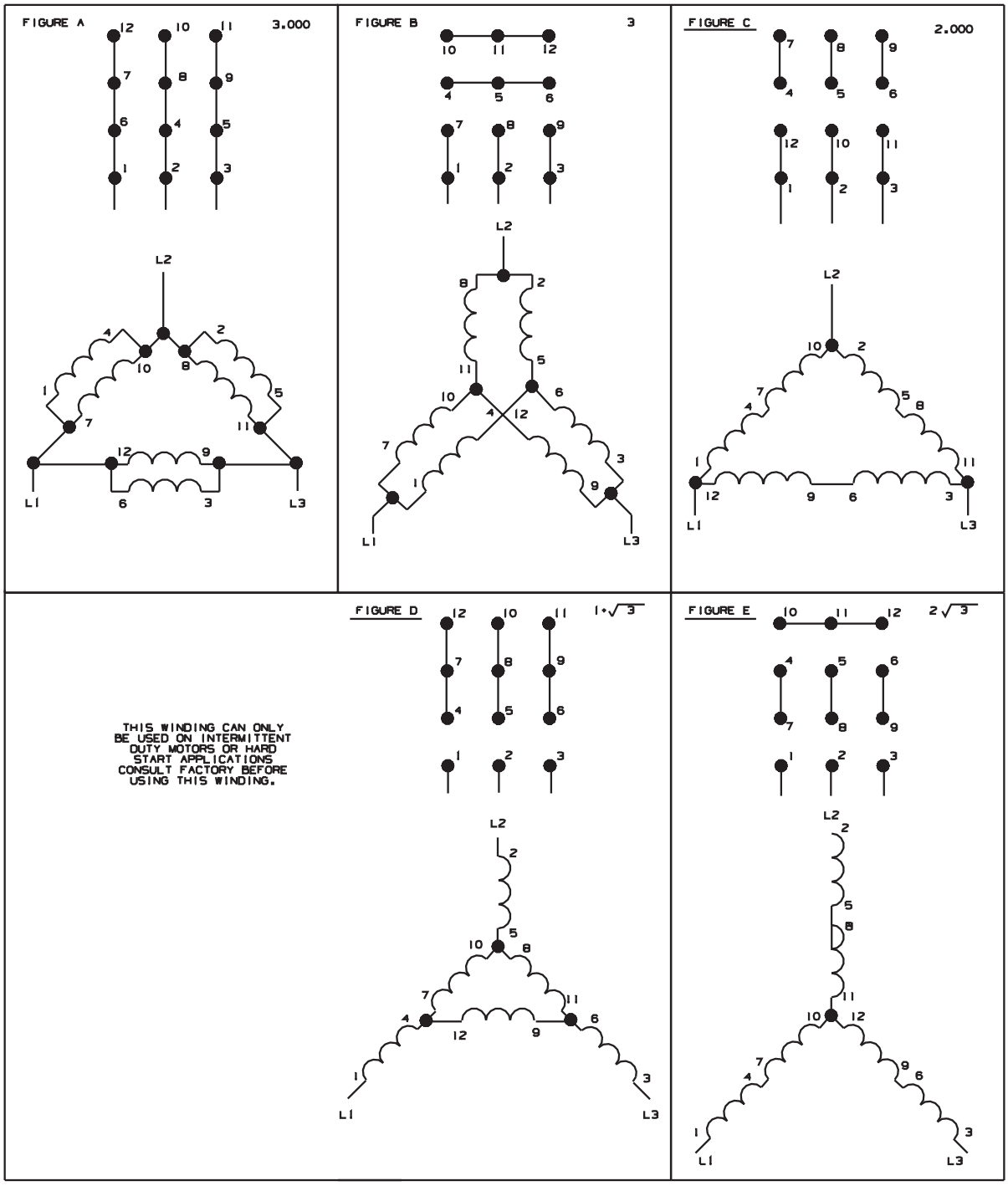


FIGURE	ELECTRICAL VALUES	SUFFIXES									
		B		H		M		T		U	
		50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ	50HZ	60HZ
A	1.000	208	230			200	220	220	240	200-220	208-240
B	$\sqrt{3}$				208	346	380	380		346-380	380
C	2.000	416	460	220	240	400	440	440	480	400-440	440-480
D	$1+\sqrt{3}$						600				600
E	$2\sqrt{3}$			380							



06 07 08 09 10 11 12 13 14 15 16 17

BMP850029

MOTOR CONNECTION DIAGRAMS

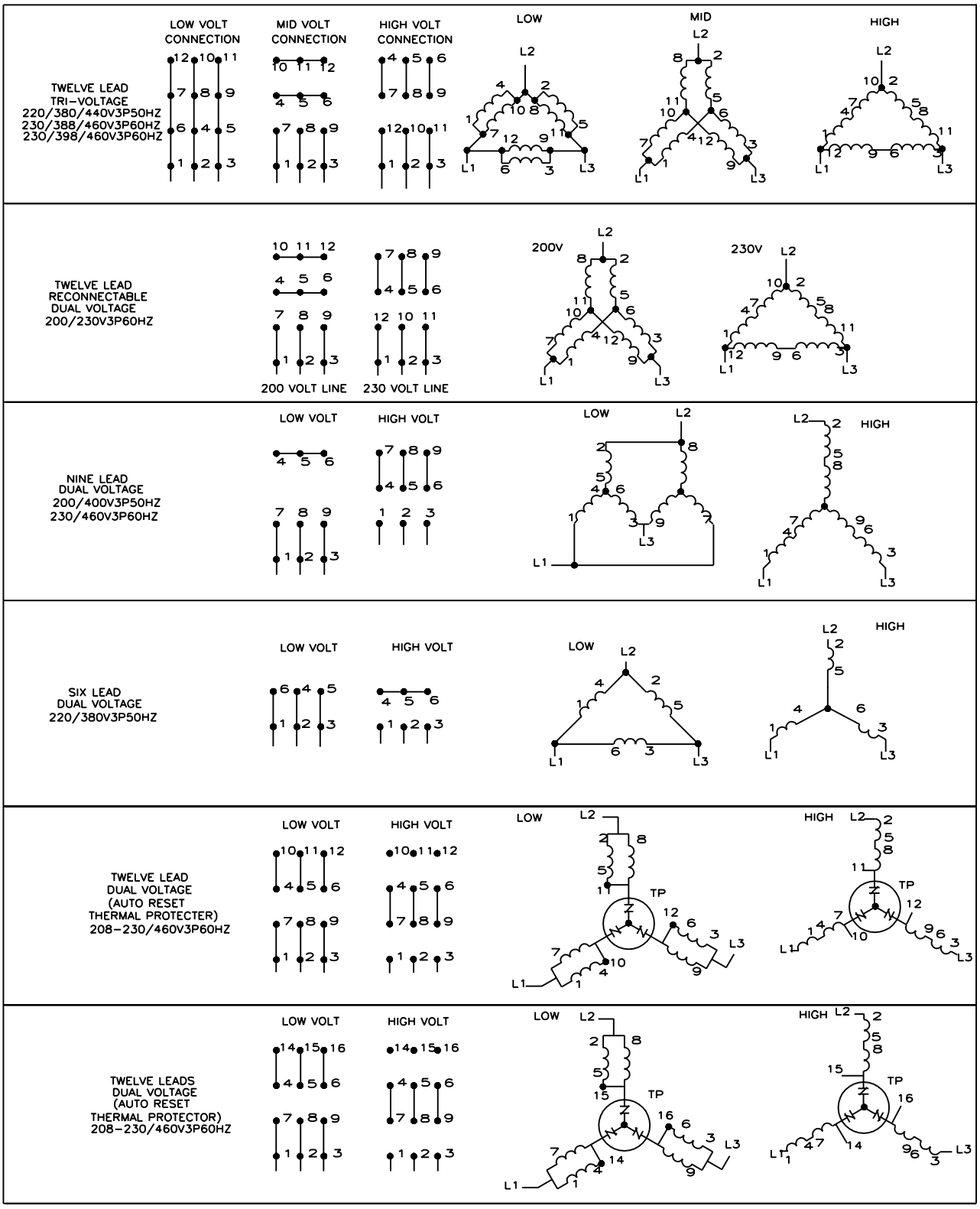
THREE PHASE SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS

(ONLY FOR MOTOR SUFFIXES LISTED)

PELLERIN MILNOR CORPORATION

BMP850029
993628

BMP850029
993628

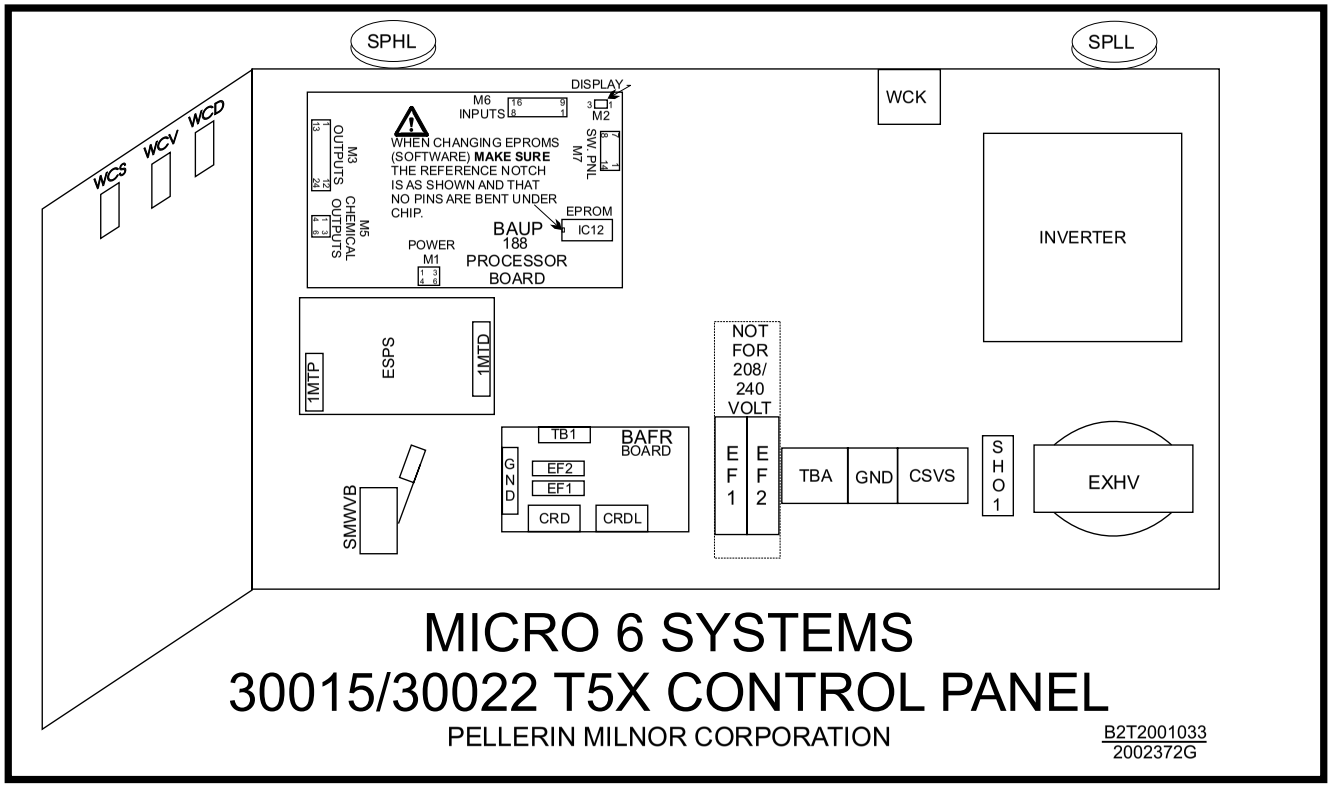


W80008

THREE PHASE
MOTOR CONNECTION DIAGRAMS
SINGLE SPEED MOTORS WITH MULTIPLE VOLTAGE RATINGS
PELLERIN MILNOR CORPORATION

W80008
2001253A

W80008
2001253A



MICRO 6 SYSTEMS
30015/30022 T5X CONTROL PANEL

PELLERIN MILNOR CORPORATION

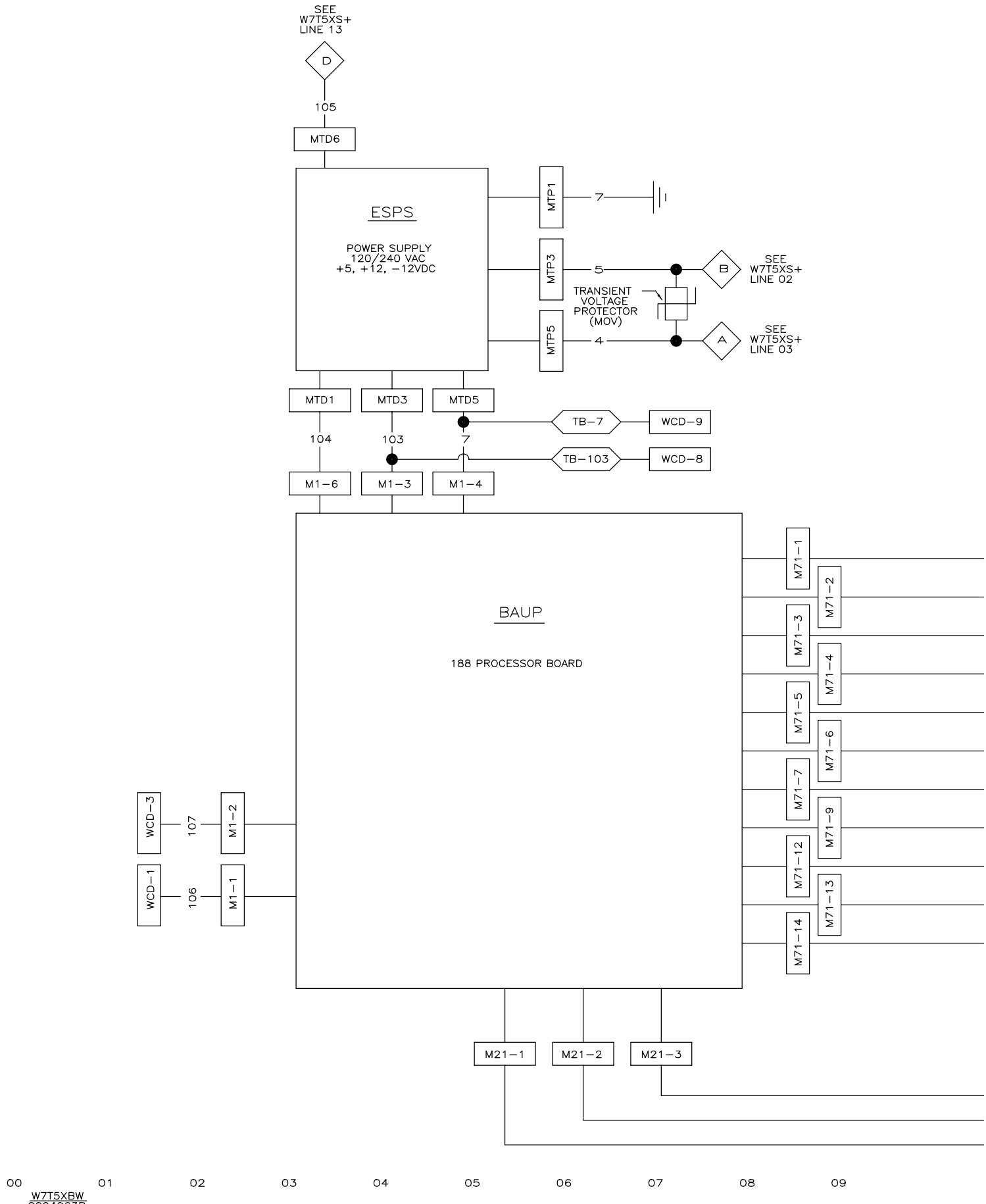
B2T2001033
2002372G

W7T5XTG1

MICRO 6 SYSTEMS
CONTROL BOX LAYOUT

PELLERIN MILNOR CORPORATION

W7T5XTG1
2002372A


SEE
W7T5XS+
LINE 13
D
105
MTD6
ESPS
POWER SUPPLY
120/240 VAC
+5, +12, −12VDC
MTP1
7
1
MTP3
5
B
SEE
W7T5XS+
LINE 02
TRANSIENT
VOLTAGE
PROTECTOR
(MOV)
MTP5
4
A
SEE
W7T5XS+
LINE 03
MTD1
MTD3
MTD5
TB−7
WCD−9
104
103
7
TB−103
WCD−8
M1−6
M1−3
M1−4
BAUP
188 PROCESSOR BOARD
M71−1
M71−2
M71−3
M71−4
M71−5
M71−6
M71−7
M71−9
M71−12
M71−13
M71−14
WCD−3
107
M1−2
WCD−1
106
M1−1
M21−1
M21−2
M21−3
00
01
02
03
04
05
06
07
08
09
W7T5XBW
2004063B

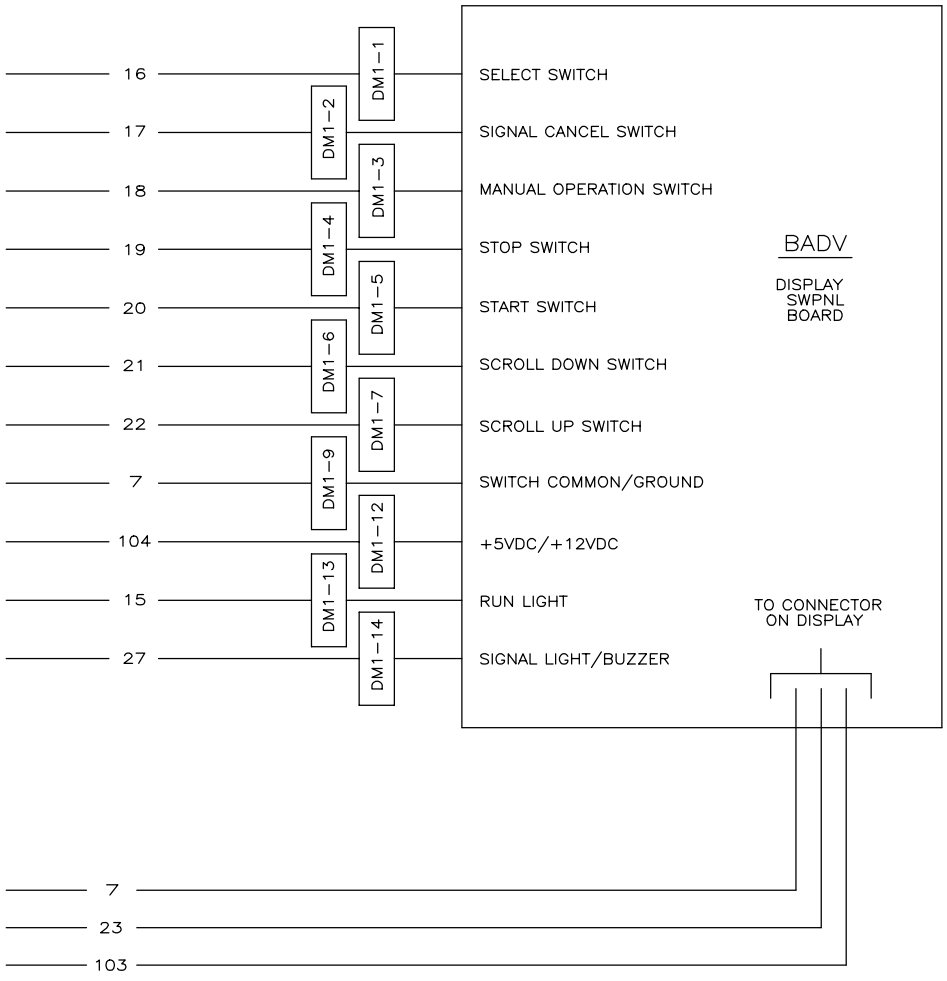
W7T5XBW
MICRO 7 SYSTEMS
SCHEMATIC: BOARD TO BOARD WIRING
PELLERIN MILNOR CORPORATION

WIRE COLOR CODE

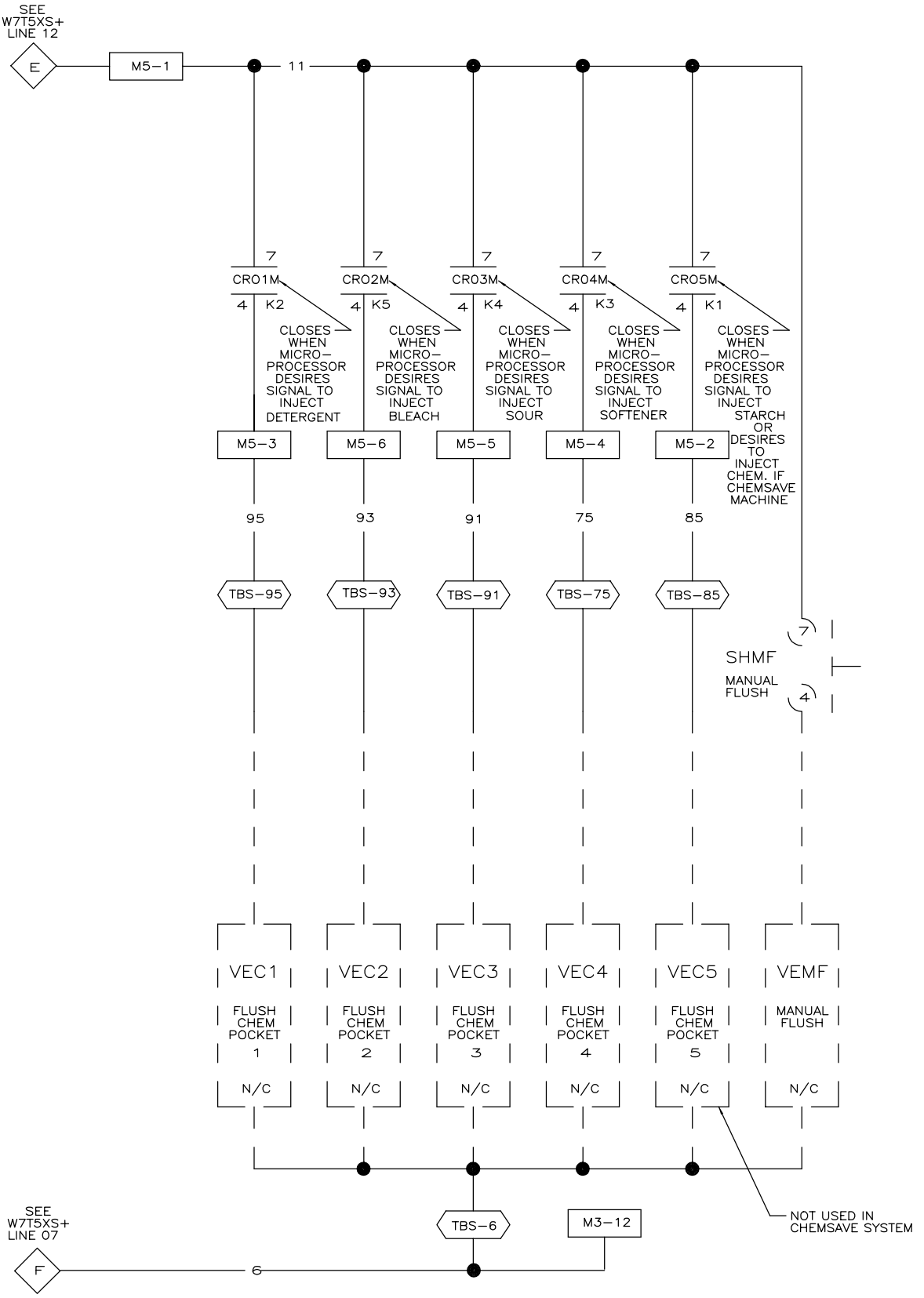
WIRE COLOR	APPLICATION
RED	A.C. CONTROL
RED/WHITE	A.C. COMMON
BLUE –103	+5 VDC
BLUE/ORANGE –104	+12VDC
YELLOW/GREEN	GROUND
BLUE/WHITE –7	D.C. GROUND
BLUE/BLACK –105	D.C. CONTROL SIGNALS

NOTES

1. M1, M2, M4, AND M7 ARE LOCATED ON BAUP 188 PROCESSOR BOARD.
2. DM1 IS LOCATED ON BADU DISPLAY SWPNL BOARD.
3. WCD IS THE DOWNLOAD CONNECTOR LOCATED ON THE SIDE OF THE SWITCH PANEL CONTROL BOX.



10 11 12 13 14 15 16 17 18



W7T5XCF
2001135B

LITHO IN U.S.A.

W7H7JCF
2001135B

W7T5XCF

SCHEMATIC: FLUSHING SUPPLIES

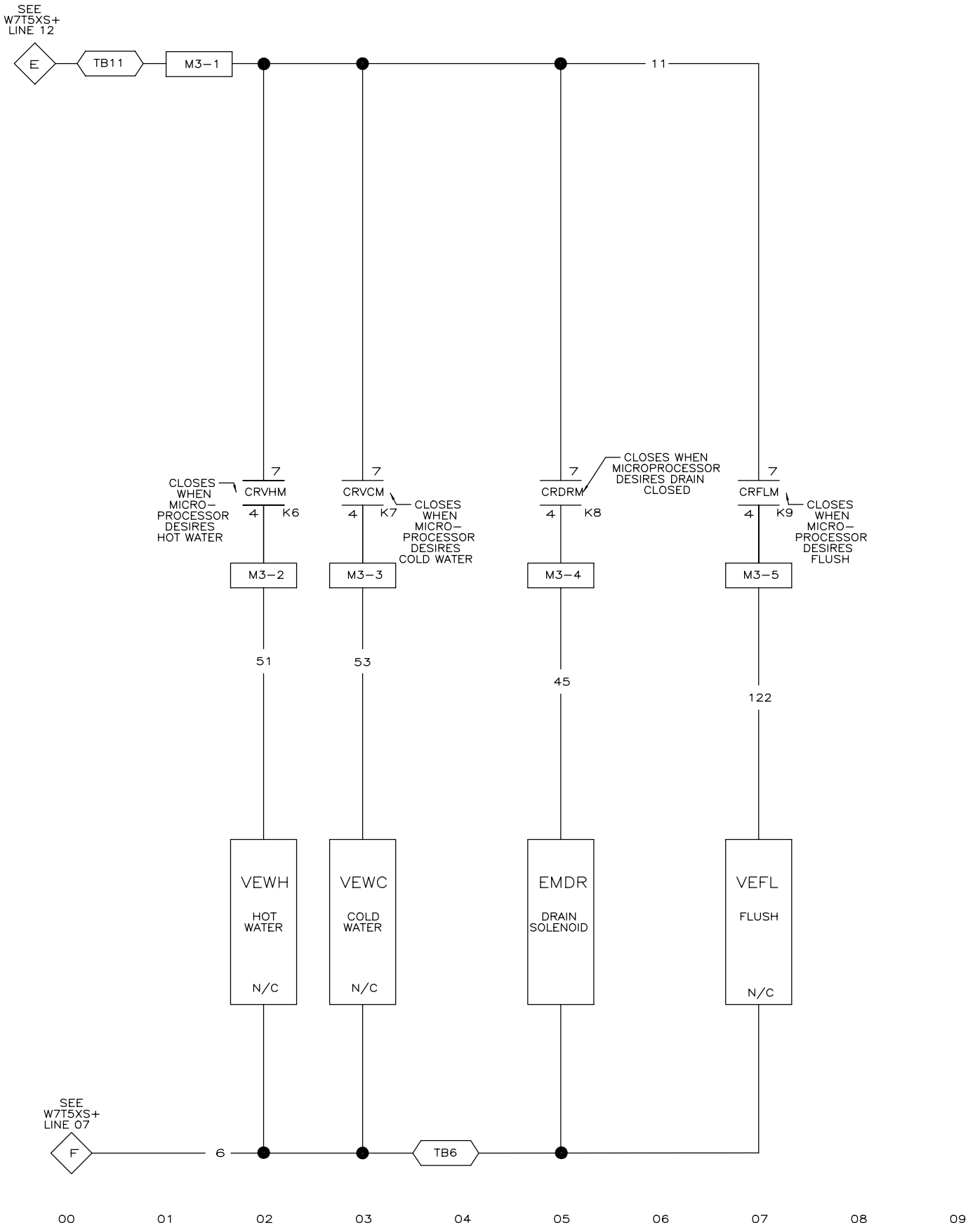
220V1P50HZ/240V1P60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. M 5 IS LOCATED ON THE PROCESSOR BOARD.
2. TBS IS LOCATED NEAR THE REAR ACCESS PANEL NEXT TO THE INCOMING POWER CONNECTIONS.

W7T5XCF
2001135B



W7T5XEV
2001135B

W7T5XEV

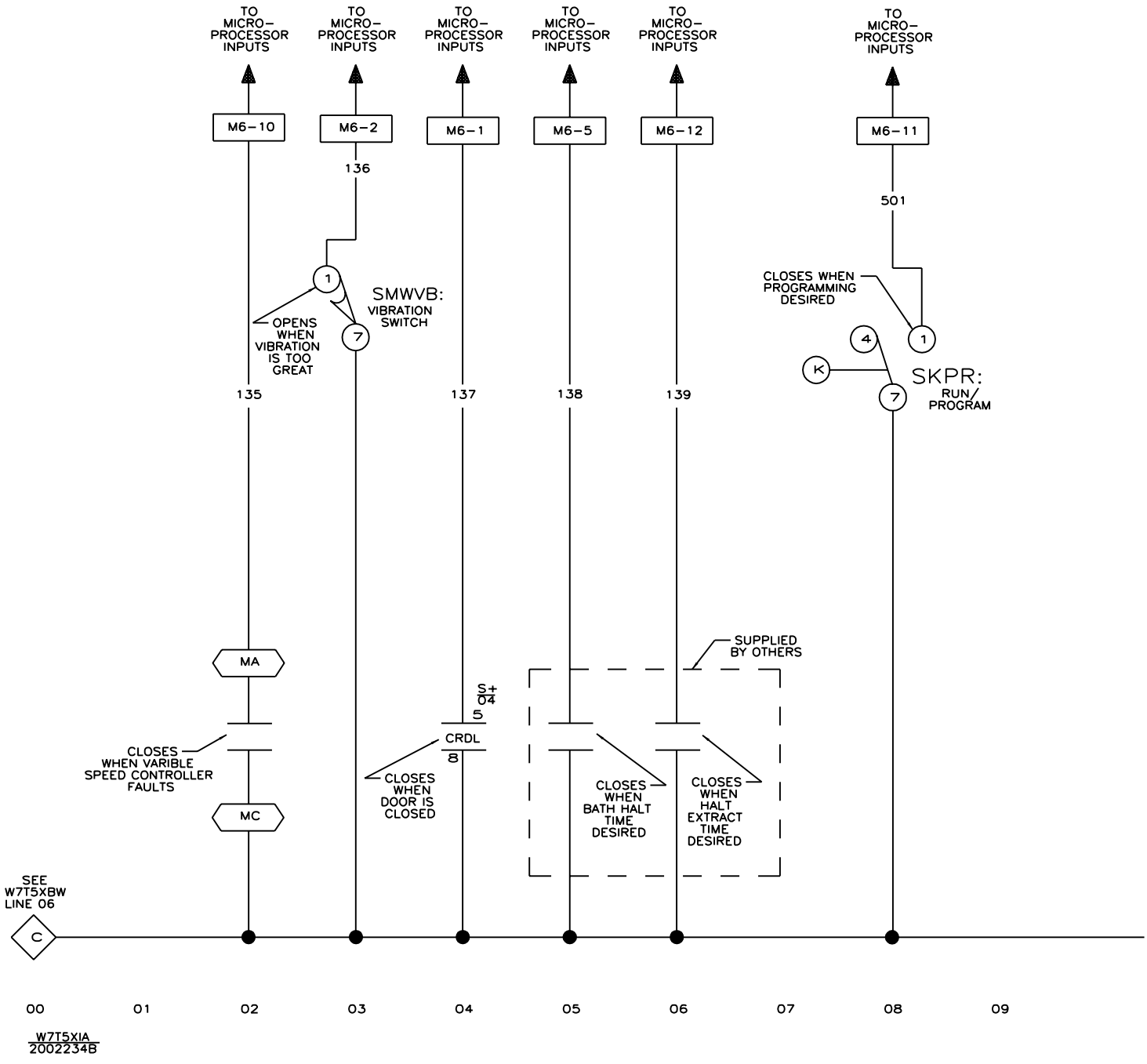
SCHEMATIC: ELECTRIC VALVES
220V1P50HZ/240V1P60HZ

PELLERIN MILNOR CORPORATION

NOTES:

1. M3 IS LOCATED ON THE BAUP (188 PROCESSOR BOARD).

10 11 12 13 14 15 16


TO MICRO– PROCESSOR INPUTS
M6–10
M6–2
M6–1
M6–5
M6–12
M6–11
136
501
SMWVB:
VIBRATION SWITCH
OPENS WHEN VIBRATION IS TOO GREAT
CLOSES WHEN PROGRAMMING DESIRED
SKPR:
RUN/ PROGRAM
135
137
138
139
MA
MC
CLOSES WHEN VARIBLE SPEED CONTROLLER FAULTS
S+ 04
5
CRDL
8
CLOSES WHEN DOOR IS CLOSED
SUPPLIED BY OTHERS
CLOSES WHEN BATH HALT TIME DESIRED
CLOSES WHEN HALT EXTRACT TIME DESIRED
SEE W7T5XBW LINE 06
C
00
01
02
03
04
05
06
07
08
09
W7T5XIA
2002234B

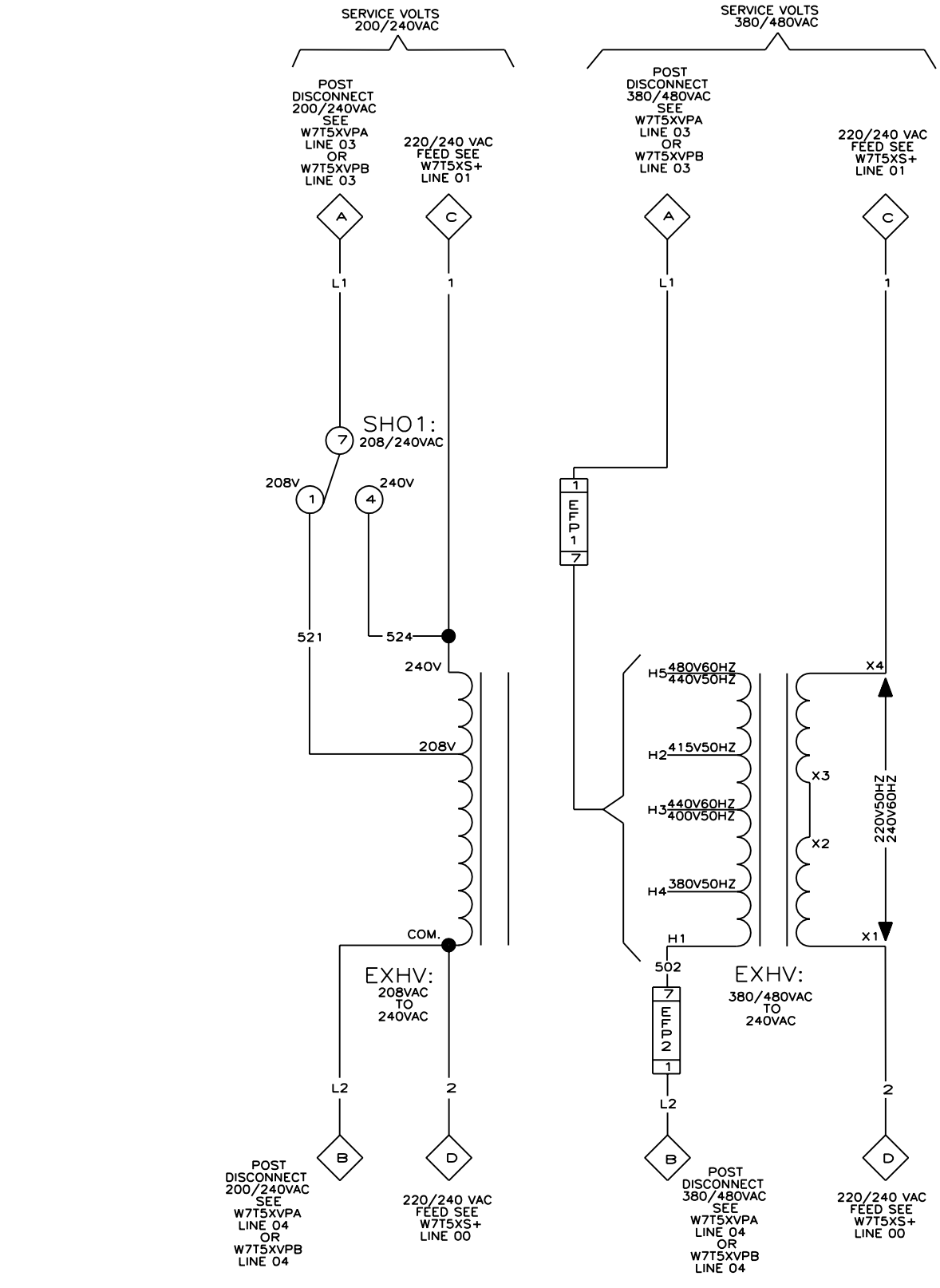
W7T5XIA

SCHEMATIC: MICROPROCESSOR INPUTS

PELLERIN MILNOR CORPORATION

NOTES

1. M6 IS LOCATED ON THE PROCESSOR BOARD.

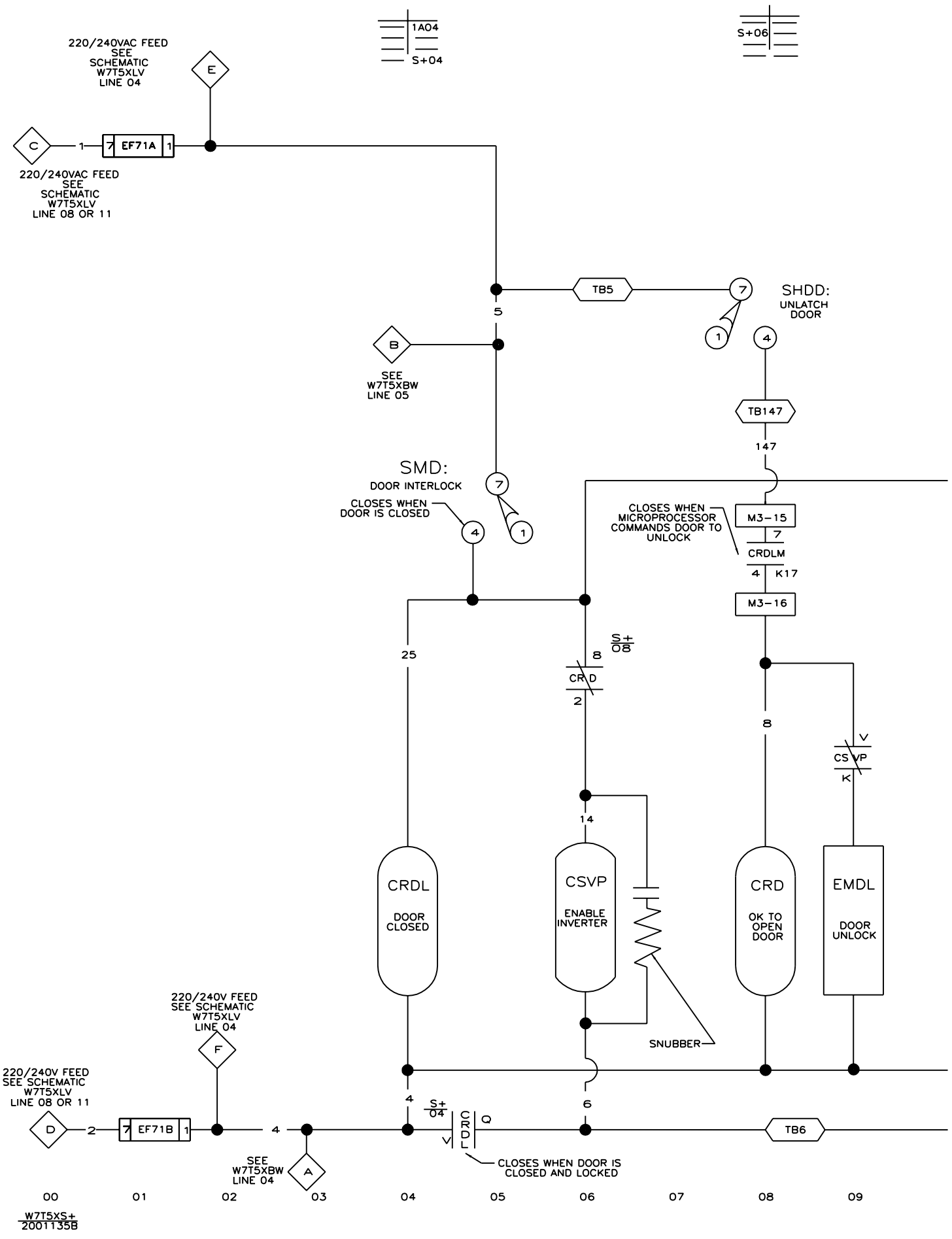


W7T5XLV
2003356B

W7T5XLV

SCHEMATIC: CONTROL CIRCUIT TRANSFORMER 220V1P50HZ/240V1P60HZ

PELLERIN MILNOR CORPORATION


220/240VAC FEED
SEE
SCHEMATIC
W7T5XLV
LINE 04
E
1A04
S+04
S+06
C
1
7
EF71A
1
220/240VAC FEED
SEE
SCHEMATIC
W7T5XLV
LINE 08 OR 11
TB5
5
7
1
SHDD:
UNLATCH
DOOR
4
B
SEE
W7T5XBW
LINE 05
TB147
147
SMD:
DOOR INTERLOCK
CLOSES WHEN
DOOR IS CLOSED
7
4
1
CLOSES WHEN
MICROPROCESSOR
COMMANDS DOOR TO
UNLOCK
M3-15
7
CRDLM
4
K17
M3-16
25
S+
08
8
CR D
2
8
V
CS VP
K
14
CRDL
DOOR
CLOSED
CSVP
ENABLE
INVERTER
SNUBBER
CRD
OK TO
OPEN
DOOR
EMDL
DOOR
UNLOCK
220/240V FEED
SEE SCHEMATIC
W7T5XLV
LINE 04
F
220/240V FEED
SEE SCHEMATIC
W7T5XLV
LINE 08 OR 11
D
2
7
EF71B
1
4
4
6
S+
04
CRDL
V
Q
TB6
SEE
W7T5XBW
LINE 04
A
CLOSES WHEN DOOR IS
CLOSED AND LOCKED
00
01
02
03
04
05
06
07
08
09
W7T5XS+
2001135B

W7T5XS+

SCHEMATIC: START CIRCUIT & DOOR INTERLOCK FOR 30015T5X & 3022T5X

220V,1P,50HZ/240V,1P,60HZ

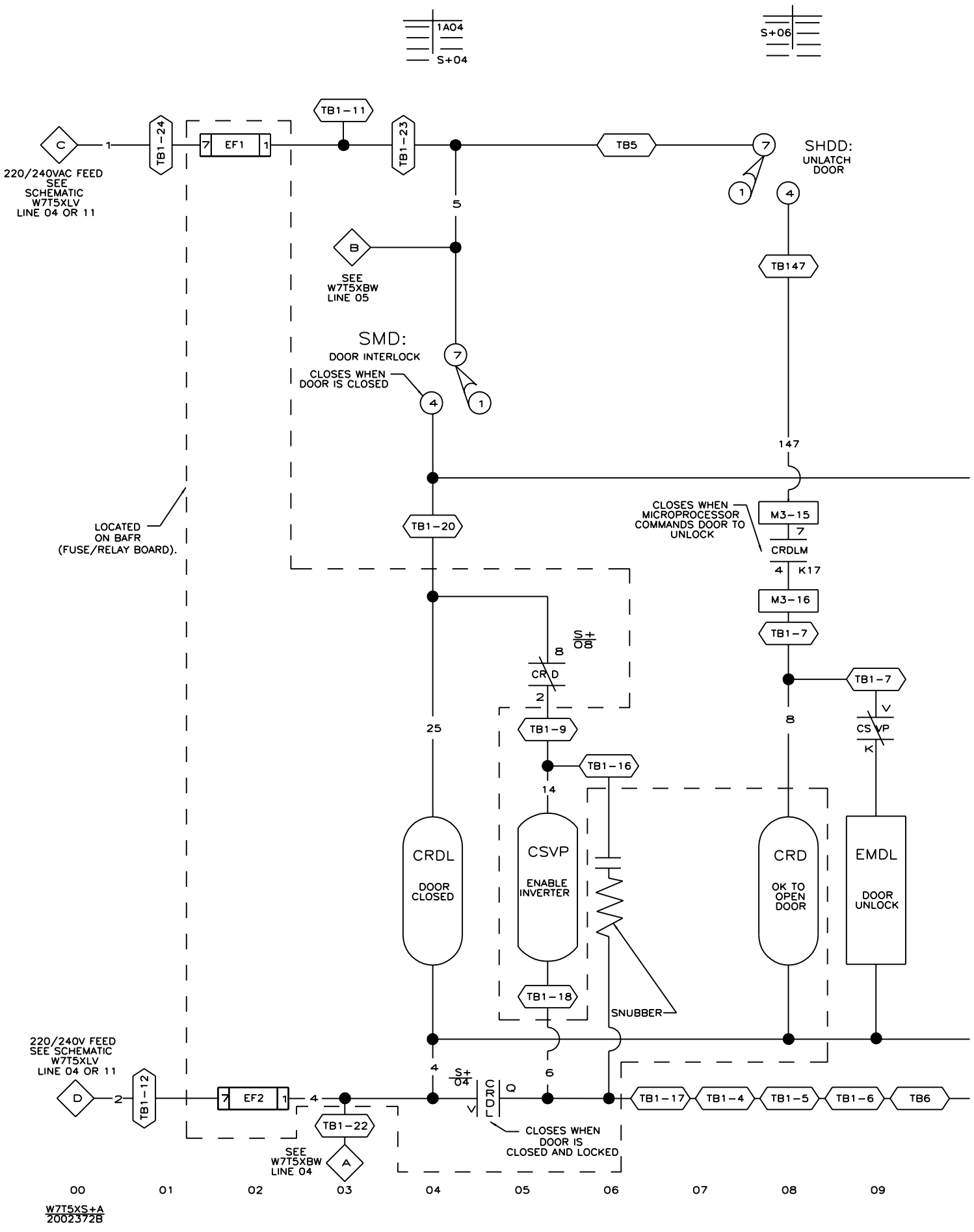
PELLERIN MILNOR CORPORATION

11 — E — SEE W7T5XCF & W7T5XEV LINE 00

M3-23 M3-24

F — SEE W7T5XCF LINE 01

10 11 12 13 14 15 16


1A04
S+04
S+06
TB1-11
TB1-24
TB1-23
EF1
TB5
C
220/240VAC FEED
SEE
SCHEMATIC
W7T5XLV
LINE 04 OR 11
SHDD:
UNLATCH
DOOR
B
SEE
W7T5XBW
LINE 05
TB147
SMD:
DOOR INTERLOCK
CLOSES WHEN
DOOR IS CLOSED
147
LOCATED
ON BAFR
(FUSE/RELAY BOARD).
TB1-20
CLOSES WHEN
MICROPROCESSOR
COMMANDS DOOR TO
UNLOCK
M3-15
CRDLM
K17
M3-16
TB1-7
S+
08
CR D
TB1-9
TB1-16
TB1-18
25
14
CRDL
DOOR
CLOSED
CSVP
ENABLE
INVERTER
CRD
OK TO
OPEN
DOOR
EMDL
DOOR
UNLOCK
SNUBBER
220/240V FEED
SEE SCHEMATIC
W7T5XLV
LINE 04 OR 11
D
TB1-12
EF2
TB1-22
SEE
W7T5XBW
LINE 04
A
S+
04
CRDL
TB1-17
TB1-4
TB1-5
TB1-6
TB6
CLOSES WHEN
DOOR IS
CLOSED AND LOCKED
00
01
02
03
04
05
06
07
08
09
W7T5XS+A
2002372B

W7T5XS+A

SCHEMATIC: START CIRCUIT & DOOR INTERLOCK FOR 30015T5X & 3022T5X

220V,1P,50HZ/240V,1P,60HZ

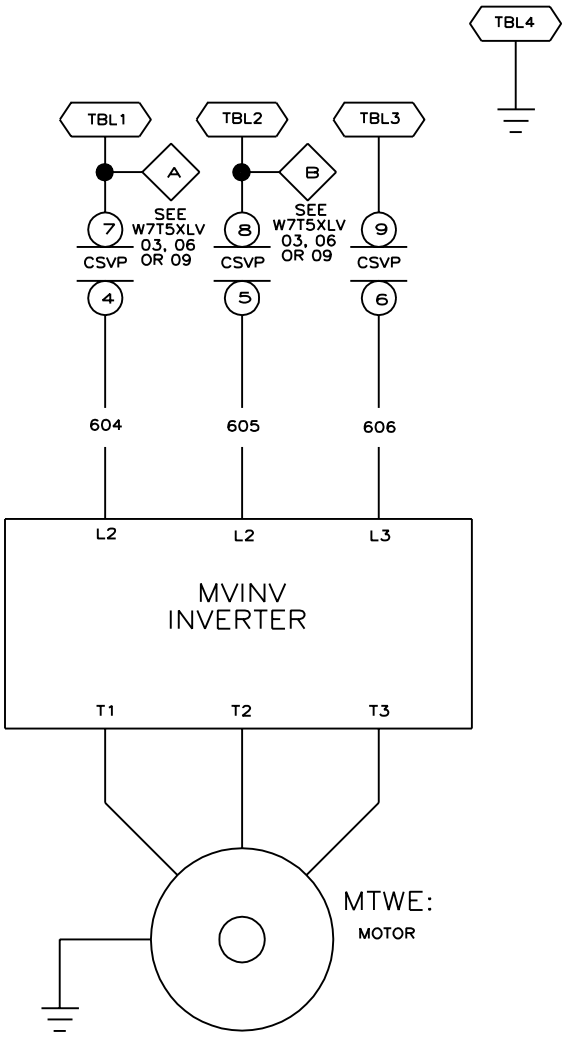
PELLERIN MILNOR CORPORATION

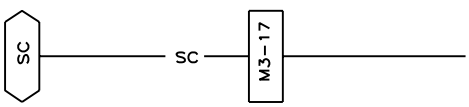
11 — E — SEE W7T5XCF & W7T5XEV LINE 00

M3-23 M3-24

TB2-1 TB2-2 TB2-3 TB2-4 — F — SEE W7T5XCF LINE 01

10 11 12 13 14 15 16





LITHO IN U.S.A.

00 01 02 03 04 05 06 07 08 09 10

W7T5XVPA
2001135B

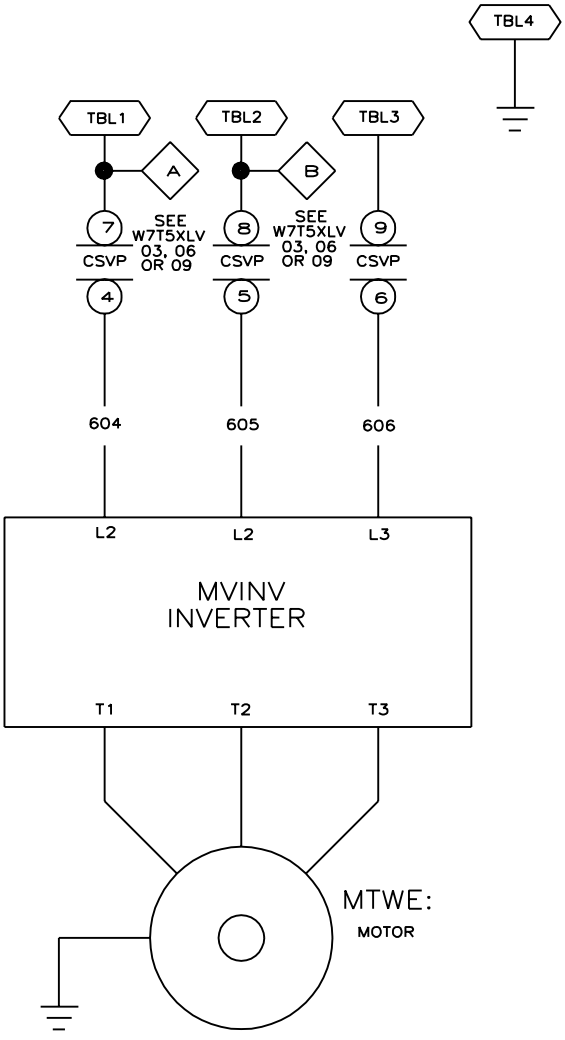
	CW	CCW			
	K21	K22	K18	K19	K20
WASH	X				
DRAIN	X				
EXTRACT	X				

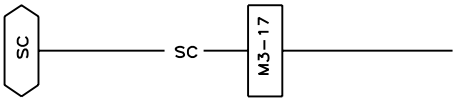
SEQUENCE

W7T5XVPA

SCHEMATIC: VARIABLE SPEED CONTROLLER FOR 30015T5X & 30022T5X (GPD305)

PELLERIN MILNOR CORPORATION





LITHO IN U.S.A.

00 01 02 03 04 05 06 07 08 09 10

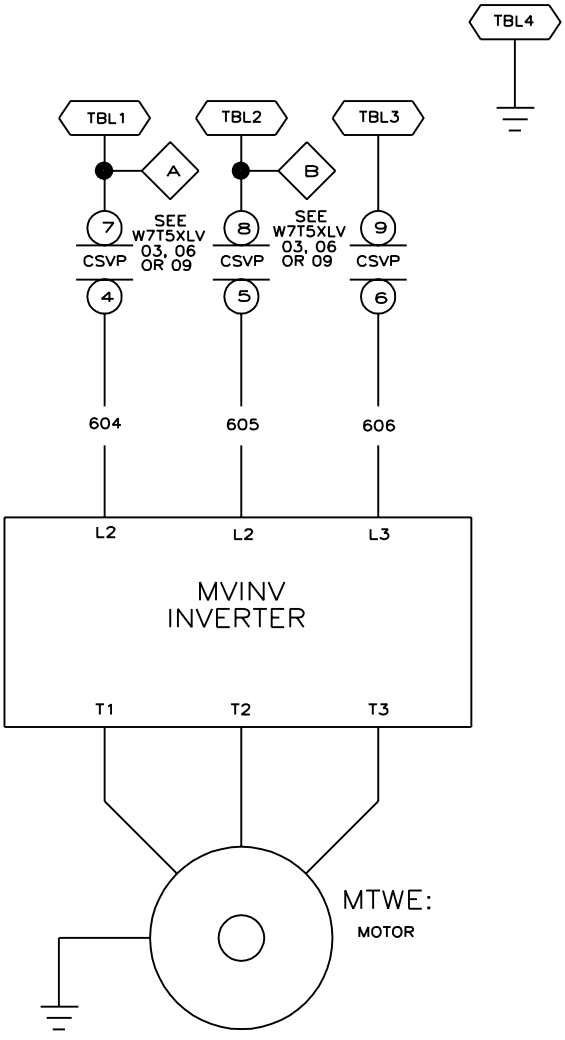
W7T5XVPB
2001135B

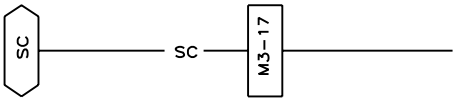
SEQUENCE	CW K21	CCW K22	K18	K19	K20
WASH	X				
DRAIN	X			X	
EXTRACT	X				X

W7T5XVPB

SCHEMATIC: VARIABLE SPEED CONTROLLER FOR 30015T5X & 30022T5X WITH SINGLE PHASE POWER (GPD315)

PELLERIN MILNOR CORPORATION





LITHO IN U.S.A.

00 01 02 03 04 05 06 07 08 09 10

W7T5XVPC
2002364B

SEQUENCE	CW K21	CCW K22	K18	K19	K20
WASH	X				
DRAIN	X			X	
EXTRACT	X				X

W7T5XVPC

SCHEMATIC: VARIABLE SPEED CONTROLLER FOR 30015T5X & 30022T5X WITH SINGLE PHASE POWER (GPD506)

PELLERIN MILNOR CORPORATION